IN THE CLAIMS

Please amend the claims as follows:

Claims 1-17 (Canceled).

Claim 18 (Currently Amended): A variable-reluctance analog position transducer configured to determine a position of a target, comprising:

a target made of a ferromagnetic material, the target being rotationally mobile around a shaft perpendicular to an axis of magnetization of [[the]] at least one magnet, the target including three spiral teeth, each disposed at an angle of 120°;

~~at least one magnet,~~ the target and the at least one magnet defining between one another an air gap; and

a magnetosensitive element detecting a magnetic induction caused by a presence of the target and related to the air gap between the target and the at least one magnet, wherein the at least one magnet has a unidirectional magnetization along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the at least one magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the induction as a function of the position of the target corresponds to a predefined linear function.

Claims 19-21 (Canceled).

Claim 22 (Previously Presented): A variable-reluctance analog position transducer according to claim 18, wherein the target is rotationally mobile around a shaft parallel to an axis of magnetization of the at least one magnet.

Claim 23 (Previously Presented): A variable-reluctance analog position transducer according to claim 18, wherein a plane in which displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element.

Claim 24 (Previously Presented): A variable-reluctance analog position transducer according to claim 18, further comprising a ferromagnetic piece adhesively bonded to a back of the at least one magnet.

Claim 25 (Previously Presented): A variable-reluctance analog position transducer according to claim 24, wherein the at least one magnet is adhesively bonded to a T-shaped ferromagnetic piece.

Claim 26 (Previously Presented): A variable-reluctance analog position transducer target according to claim 18, wherein the target has a particular or optimized shape, configured to deliver a linear induction as a function of the displacement of the target.

Claim 27 (Previously Presented): A variable-reluctance analog position transducer according to claim 18, wherein the magnetosensitive element is placed in the cavity in a zone of minimal induction.

Claims 28 and 29 (Canceled).

Claim 30 (Previously Presented): A variable-reluctance analog position transducer according to claim 18, wherein a maximum measurable angular travel is close to 360°.

Claims 31 and 32 (Canceled).

Claim 33 (Previously Presented): An angular position transducer for a camshaft or crankshaft, provided with an analog position sensor according to claim 18.

Claim 34 (Previously Presented): A method for construction of a target for an analog position transducer made of a ferromagnetic material, having a desired induction signal, the transducer including,

a target made of a ferromagnetic material;

at least one magnet, the target and the at least one magnet defining between one another an air gap;

a magnetosensitive element detecting a magnetic induction caused in the air gap by displacement of the target relative to the at least one magnet, wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the at least one magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the induction as a function of the position of the target corresponds to a predefined function,

the method comprising:

establishing a first geometric shape for the target;

positioning points on the target, the points having coordinates in a viewing plane of spatial coordinates;

calculating a magnetic induction signal as a function of linear or rotary displacement of the target, the displacement of the target being effected over a predefined trajectory;

modifying coordinates of one of the points and recalculating the induction as a function of the position of the target to determine influence of this point on the induction measured by the at least one magnet;

determining a matrix and solving an equation configured to define a new geometric shape of the first shape determined previously for the target; and

repeating the calculating, modifying, and determining until a magnetic induction as a function of the linear or rotary displacement of the target is obtained satisfying in conformity with desired linearity criteria, or until a nonlinear function is obtained.

Claim 35 (Previously Presented): A variable-reluctance analog position transducer according to claim 18, wherein the induction as a function of the position of the target is a linear function across the entire maximum measurable angular travel.

Claim 36 (Previously Presented): A variable-reluctance analog position transducer according to claim 18, wherein a maximum measurable angular travel is 360°, and the induction as a function of the position of the target is a linear function across the entire maximum measurable angular travel.